USAG Heidelberg
Environmental Awareness Training

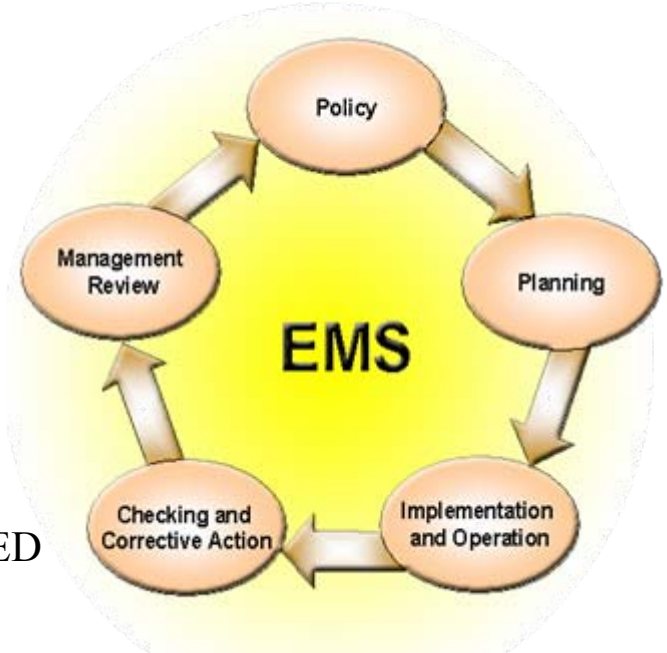
2 – Hours Hazardous Materials,

Hazardous Waste,

and Spill Response Course

EMS

- What is an EMS?
- Environmental Management System
- Drivers: EO 13148, DA, IMA-E, ISO 14001
- Benefits: SAVES MONEY AND RESOURCES, COMPLIANCE, STANDARDIZED PROCEDURES, SUSTAINS MISSION READINESS
- www.dpw.heidelberg.army.mil/environmental/Environmental_Management_System.htm



EMS cont'd

- USAG HD Significant Environmental Aspects:
  - →Energy Consumption
  - →Increase in Recycling
  - →Vehicle Utilization
- Objectives and Targets

What is YOUR Part in the EMS Process??

1) **Know how your job can impact the Environment**

2) **Work Procedures and SOP's**

3) **Use a PCAR (Preventive/Corrective Action Request) to report problems concerning:**

   - Environmental management system
   - Environmental compliance
   - Process improvement and safety issues

4) **Accept Environmental Responsibility**

5) **Understand your roles and responsibilities under the EMS**

USAG Heidelberg Environmental Awareness Training

Introduction

1.0 Hazardous Substances Management

2.0 Hazardous Material Management

3.0 Hazardous Waste Management

4.0 Hazardous Material / Waste Audits, Inspections, and Training

5.0 Spill Response

USAG Heidelberg Environmental Awareness Training

1.0 Hazardous Substances Management

- Environmental POC
- Laws and Regulations
- Classification and Characteristics

USAG Heidelberg Environmental Awareness Training

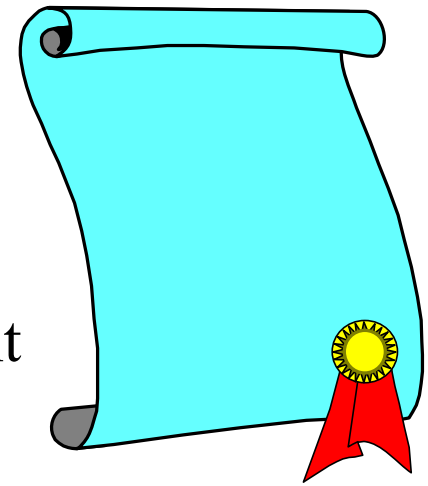
1.1 Environmental POC

- Unit ECO
- HM/HW Program Manager of the Heidelberg Garrison-DPW-ED

Ludger Henning
email: ludger.henning@us.army.mil
DSN: 387-3142, COM: 06221-4380-3142

1.0 Hazardous Substances Management

1.2 Laws and Regulations



- AR 200-1
  - Environmental Protection and Enhancement
- USAREUR Regulation 200-1,
  - Environmental Quality Program
- ARMY TM 38-410
  - Storage And Handling Of Hazardous Material
- German Final Governing Standards (FGS)

1.3 Classification and Characteristics

- Definitions
- Hazardous Properties

1.3 Classification and Characteristics

Definitions

- “Hazardous Substance”
- “Hazardous Material”
- “Hazardous Waste”

1.3 Classification and Characteristics

"Hazardous Substance"

Substances that are classified as hazardous according to a range of properties (I.e., flammable, oxidizing, or representing a hazard to the environment.

<u>Include both hazardous materials and hazardous wastes</u>

1.3 Classification and Characteristics

"Hazardous Material"

Raw materials, commodities, or other manufactured products that exhibit at least one hazardous characteristic.

Do not include hazardous wastes

1.3 Classification and Characteristics

"Hazardous Waste"

All wastes having hazardous properties, which includes:

- ***some "wastes requiring supervision"*** *(überwachungsbedürftiger Abfall).*
- ***all "wastes requiring special supervision"*** *(besonders überwachungsbedürftiger Abfall)*

1.3 Classification and Characteristics

Hazardous Properties
GFGS Table C5.T3

- Explosive
- Oxidizing
- Flammable, highly, extremely
- Toxic, very toxic
- Harmful to health
- Corrosive
- Irritant
- Sensitizing
- Carcinogenic
- Teratogenic
- Mutagenic
- Hazardous to the environment
- Inhalation hazards
- Compressed gases

1.3 Classification and Characteristics

Hazardous Properties (GFGS Table C5.T3)

Hazardous Material	**Hazardous Properties**
CARC Paint	Flammable, Irritant
Denatured Alcohol	Flammable, Irritant
Paint spray cans	Flammable
Sodium hypochlorite solution	Corrosive
Acetylene Gas	Flammable, Compressed Gas
Antifreeze	Irritant, Toxic
JP 8	Flammable, Hazardous to the environment
Calcium Hypochlorite	Corrosive, Oxidizer
DS 2 Decon Agent	Corrosive, Flammable

2.0 Hazardous Material Management

- HM storage and segregation
- MSDS / use and control
- Operating Instructions (Betriebsanweisung)
- Identification & Labeling Requirements

2.0 Hazardous Material Management

2.1 HM storage

- Containers sealed except during contents transfer
- Weekly inspections, written, retained 3 years
- Secondary containment
- Ground container during flammable transfer
- Avoid outside storage
- Watch shelf life

2.0 Hazardous Material Management

- Operated by the USAG DOL Supply & Service Division

  Located at

  Spinelli Bks Building 1560 Bay 5

  HMRC Manager: George Spears
  HMRC Hazardous Material Processor: John Price

Contact Information

DSN 384-6606 / 6607
CIV 0621-730-6606 / 6607
FAX: XXX 6608
EMAIL george.spears@26asg.heidelberg.army.mil

HMRC Operating Hours

Office Hours
0730-1500 Monday – Friday

Warehouse Hours
0800-1600 Monday - Friday

2.2 HM Segregation Requirements

Compatibility

- Potential chemical reactions
- Keep 4 classes separated
  - Flammable
  - Corrosive
  - Toxic
  - Oxidizer

2.2 HM/HW Segregation Requirements

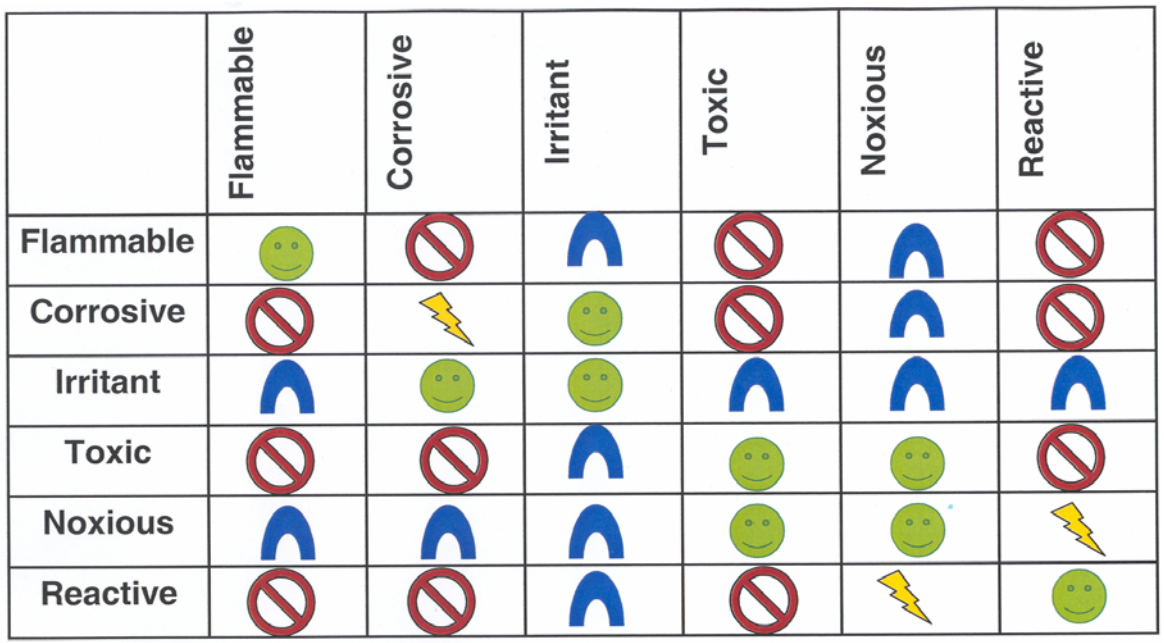
Mixing of incompatible chemicals can be disastrous!

- –Acids and Bases = Heat/Spattering
- –Ammonia + Bleach = Noxious Fumes
- –Flammable + Corrosive = Heat/Fire
- –Acids + Oil or Grease = Fire
- –Chlorine gas + Acetylene = Explosion
- –Aluminum Powder + Ammonium Nitrate = Explosion
- – DS2 + Super Tropical Bleach = Fire/Explosion
- –Flammable Liquids + H_2O_2 = Fire/Explosion
- –Sodium Cyanide + Sulfuric Acid = Hydrogen Cyanide

2.0 Hazardous Material Management

2.2 HM/HW Segregation Requirements

Chemical Storage and Segregation Tools

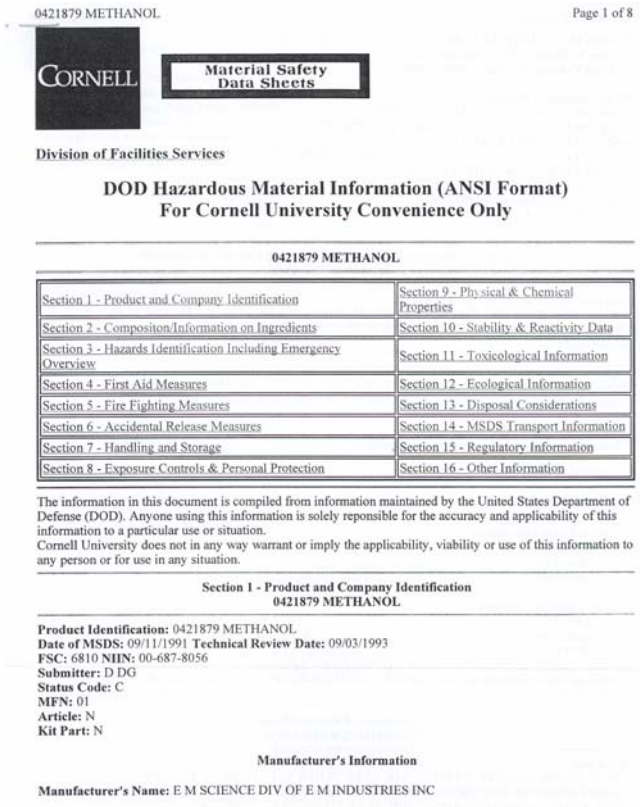


2.0 Hazardous Material Management

2.3 Material Safety Data Sheets (MSDS) use and control

MSDS

- Maintained for each and all HM
- Manufacturer or HMIRS
- English or predominant language



0421879 METHANOL Page 1 of 8

CORNELL Material Safety Data Sheets

Division of Facilities Services

DOD Hazardous Material Information (ANSI Format)
For Cornell University Convenience Only

0421879 METHANOL

Section 1 - Product and Company Identification	Section 9 - Physical & Chemical Properties
Section 2 - Composiiton/Information on Ingredients	Section 10 - Stability & Reactivity Data
Section 3 - Hazards Identification Including Emergency Overview	Section 11 - Toxicological Information
Section 4 - First Aid Measures	Section 12 - Ecological Information
Section 5 - Fire Fighting Measures	Section 13 - Disposal Considerations
Section 6 - Accidental Release Measures	Section 14 - MSDS Transport Information
Section 7 - Handling and Storage	Section 15 - Regulatory Information
Section 8 - Exposure Controls & Personal Protection	Section 16 - Other Information

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Section 1 - Product and Company Identification
0421879 METHANOL

Product Identification: 0421879 METHANOL
Date of MSDS: 09/11/1991 **Technical Review Date:** 09/03/1993
FSC: 6810 **NIIN:** 00-687-8056
Submitter: D DG
Status Code: C
MFN: 01
Article: N
Kit Part: N

Manufacturer's Information

Manufacturer's Name: E M SCIENCE DIV OF E M INDUSTRIES INC

2.0 Hazardous Material Management

2.4 Operating Instructions (Betriebsanweisung)

Have to be filed for each hazardous substance handled or stored where German employees work

415th BSB

Betriebsanweisung
Gem. § 20 GEFAHRSTOFFVERORDNUNG

Datum: März 2004
Kaserne:
Einheit:

Arbeitsbereich: Werkstatt
Arbeitsplatz/Tätigkeit: Reparaturarbeiten / Instandhaltung / Lagerung

Gefahrstoffgruppe

Benzin (Ottokraftstoff)
Benzin (e.g. MOGAS), Kontakt bei allen Arbeiten an der Kraftstoffanlage

Gefahren für Mensch und Umwelt

- Leichtentzündlich - bei Gebrauch Bildung explosionsfähiger/ leichtentzündlicher Dampf-Luft-Gemische möglich
- Gefahr ernster Gesundheitsschäden bei längerer Exposition
- Giftig beim Einatmen, Verschlucken und bei Berührung mit der Haut (Entfettende Wirkung auf die Haut)
- Kann Krebs erzeugen beim Einatmen
- Dämpfe sind unsichtbar und sinken zu Boden
- Benzin ist eine wassergefährdende Flüssigkeit (WGK 3) - Eindringen in Boden, Gewässer und Kanalisation vermeiden!

Schutzmaßnahmen und Verhaltensregeln

- Beim Umgang **Schutzhandschuhe** und **Schutzbrille** tragen, Atemschutz empfehlenswert
- Von Zündquellen fernhalten - Nicht rauchen
- Berührung mit den Augen, Haut und Schleimhäuten vermeiden - Dämpfe nicht einatmen
- Nur in gut gelüfteten Bereichen verwenden (besonders in Bodennähe)
- Nicht in die Kanalisation gelangen lassen - Explosionsgefahr!
- Behälter dicht geschlossen halten

Verhalten im Gefahrenfall

- **Geeignete Löschmittel**: Kleine Entstehungsbrände mit dem Handfeuerlöscher, nicht mit Wasser bekämpfen. Kann der Brand nicht unter Kontrolle gebracht werden, so ist der Gefahrenbereich zu verlassen und Notruf zu betätigen
- **Unbeabsichtigte Freisetzung**: Verschüttete/ausgelaufene Flüssigkeiten mit flüssigkeitsbindendem Material (Spill Kit) aufnehmen und in vorgesehenem Behälter entsorgen

NOTRUF: 117 (BSB Fire Department)
NÄCHSTES TELFON: _____

Erste Hilfe

- **Nach Augenkontakt**: Mindestens 10 Minuten Augen bei gespreizten Lidern unter fließendem Wasser gründlich ausspülen, Augenarzt konsultieren
- **Nach Hautkontakt**: Betroffene Hautpartien mit viel Wasser und Seife gründlich abwaschen, verunreinigte Kleidung entfernen
- **Bei Einatmen** an frische Luft bringen, Arzt konsultieren
- **Bei Verbrennungen**: Sofortige Kühlung der betroffenen Hautpartien mit Wasser

NOTRUF: 117 (BSB Fire Department)
NÄCHSTES TELFON: _____

Sachgerechte Entsorgung

A

Verunreinigtes Benzin in einem dicht verschlossenen, für hochentzündliche Flüssigkeiten zugelassenen und gekennzeichneten Behälter sammeln, am HWAP bis zur ordnungsgemäßen Beseitigung zwischenlagern

Zusätzlich zu beachten

Spezielle Informationen hinsichtlich der möglichen Gefahren für Mensch und Umwelt sowie zu den Gefährlichkeitsmerkmalen der einzelnen Gefahrstoffe sind zusätzlich den entsprechenden **Sicherheitsdatenblättern (MSDSs)** der einzelnen Stoffe zu entnehmen. Für weitere Hinweise siehe auch „**Allgemeine Betriebsanweisung**".

2.5 Identification & Labeling Requirements

Why is labeling important?

- Other than the primary users
- Limitations to human memory
- Assists in proper storage and segregation
- It's the law

2.5 Identification & Labeling Requirements

Hazardous Chemical Warning Labels

- All HM with US origin will have hazardous chemical warning labels
- HM of non US origin:
  - Internationally recognized name of the substance
  - Name, address, and phone number of manufacturer
  - The appropriate hazard symbol
  - R and S phrases for specific HM (indicated by MSDS)

2.0 Hazardous Material Management

2.5 Identification & Labeling Requirements

Hazardous Chemical Warning Labels

PER DoD 6050.5-H

HAZARDOUS CHEMICAL WARNING LABEL

1. CHEMICAL/COMMON NAME

2. HAZARD CODE | 3. NSN/LSN

4. PART NUMBER

5. ITEM NAME

6. HAZARDS (x all that apply)	(1) Acute (Immediate) NONE	SLIGHT	MODERATE	SEVERE	(2) Chronic (Delayed)
a. HEALTH					
b. CONTACT					
c. FIRE					
d. REACTIVITY					

7. SPECIFIC HAZARDS AND PRECAUTIONS (Including Target Organ Effects)

(See MSDS for further information)

8. PROTECT (X all that apply) a. EYES b. SKIN c. RESPIRATORY

9. CONTACT: a. COMPANY NAME

b. ADDRESS (Street, P.O. Box, City, State, Zip Code and Country)

c. EMERGENCY TELEPHONE NUMBER (Include Area Code)

10. PROCUREMENT YEAR FOR HAZARDOUS CHEMICAL

DD Form 2522 (1C), DEC 88 S/N 0102-LF-012-1100 ☆GPO: 1991-507-027

ETV10004

PER GFGS

2.5 Identification & Labeling Requirements

- External Facility Signs in German and English
- Hazard Signs (Warnzeichen)
- Mandatory Signs (Gebotszeichen)
- Standard Operating Procedures (SOP)
- Operating Instructions (Betriebsanweisungen)

2.0 Hazardous Material Management

2.5 Identification & Labeling Requirements

External Facility Sign

Hazardous Material Storage Area (HMSA)

GFGS C5.3.7.3

2.0 Hazardous Material Management

2.5 Identification & Labeling Requirements

GFGS Hazard Signs (Warnzeichen)

GFGS C5.Appendix 4

2.0 Hazardous Material Management

2.5 Identification & Labeling Requirements

Mandatory
Signs
(Gebotszeichen)

GFGS C5.Appendix 4

3.0 Hazardous Waste Management

- HW Management Plan
- HW Accumulation Point (HWAP)
- Hazardous Waste Storage Area (HWSA)
- Identification & Labeling Requirements

3.0 Hazardous Waste Management

3.1 HW Management Plan

- WMP and Registry- German requirements
- WMP – USAREUR and DoD requirements
- Every HW facility must have a copy of HWMP
  - guidelines for HW log
  - Identify responsibilities
  - HWAP/HWSA locations
  - Installation procedures
  - Inspection procedures
  - HWSA security requirements
  - HAZMIN program/spill prevention references

3.0 Hazardous Waste Management

3.2 HW Accumulation Point (HWAP)

- Location prior to removal to HWSA
- One container per waste stream
- At or near generation point – operator controlled
- Segregation
- English and German signs
- Secondary containment for free liquids
- Tightly seal containers
- Training and inspections

3.0 Hazardous Waste Management

3.2 HW Accumulation Point (HWAP)

3.0 Hazardous Waste Management

3.2 HW Accumulation Point (HWAP)

3.0 Hazardous Waste Management

3.3 Hazardous Waste Storage Area (HWSA)

- Locations on DoD installations where HW is collected and stored prior to disposal
- Multiple container storage for up to one year
- Security system and warning signs (English/German)
- Communication system
- Segregation of HW
- Training and inspections
- SOP for water endangering substances

3.0 Hazardous Waste Management

3.3 Hazardous Waste Storage Area (HWSA)

3.0 Hazardous Waste Management

3.3 Hazardous Waste Storage Area (HWSA)

3.0 Hazardous Waste Management

Hazardous Waste Daily Removal

HW collected at non HWAP's should be moved to a designated HWAP or HWSA on a Daily Basis.

3.4 Identification & Labeling Requirements

- External Facility Signs in German and English
  - Access to unauthorized people is forbidden
- Hazard Signs (Warnzeichen)
- Mandatory Signs (Gebotszeichen)
- Internal Facility Signs (Container labels)
  - Hazard Signs (Warnzeichen) German & English (prevents incompatible storage)
  - Mandatory Signs (Gebotszeichen)
- HW Log

3.4 Identification & Labeling Requirements

External Facility Sign

Hazardous Waste Storage Area (HWSA)

GFGS C6.3.3.3.2

4.0 HM Audits, Inspections and Training

- Environmental Performance Assessment System (EPAS)
- Other Inspections
- Training

4.0 HM Audits, Inspections and Training

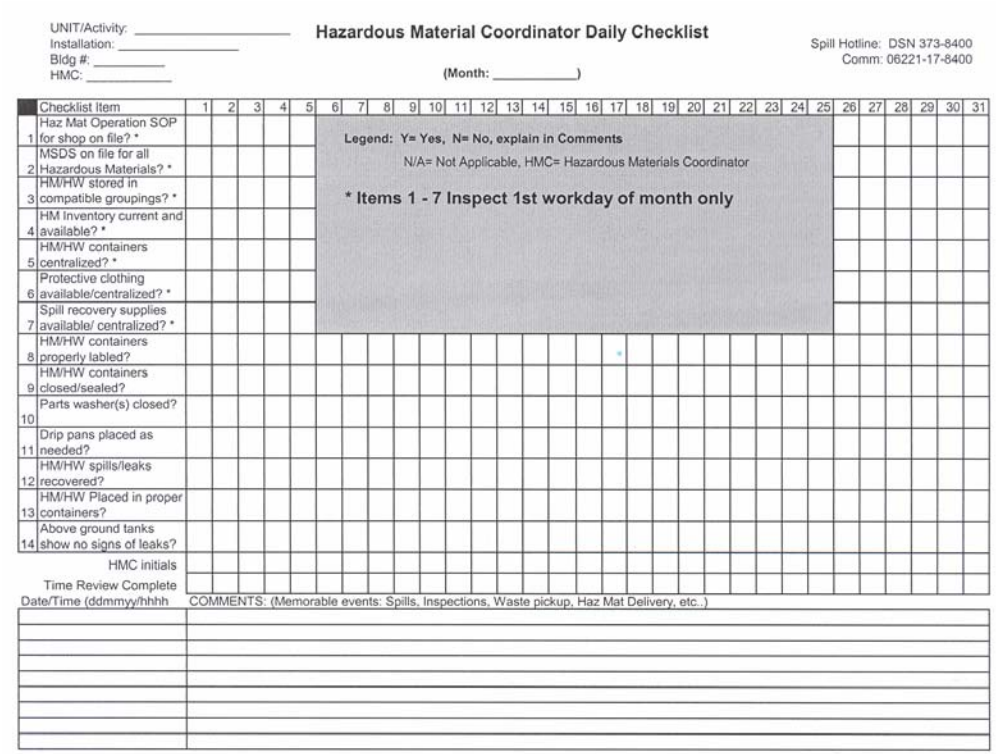
4.1 Environmental Performance Assessment System (EPAS)

- External EPAS Program
  - 3 yearly
  - Environmental Corrective Assessment Reports
- Internal EPAS Program
  - Annually
  - Installation Corrective Action Plans

4.0 HM Audits, Inspections and Training

4.2 Other Inspections

- Courtesy Inspections
- ECO Inspections
- HM/HW Operator Inspections



UNIT/Activity: _____
Installation: _____
Bldg #: _____
HMC: _____

Hazardous Material Coordinator Daily Checklist

(Month: _____)

Spill Hotline: DSN 373-8400
Comm: 06221-17-8400

	Checklist Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
1	Haz Mat Operation SOP for shop on file? *																															
2	MSDS on file for all Hazardous Materials? *																															
3	HM/HW stored in compatible groupings? *																															
4	HM Inventory current and available? *																															
5	HM/HW containers centralized? *																															
6	Protective clothing available/centralized? *																															
7	Spill recovery supplies available/ centralized? *																															
8	HM/HW containers properly labled?																															
9	HM/HW containers closed/sealed?																															
10	Parts washer(s) closed?																															
11	Drip pans placed as needed?																															
12	HM/HW spills/leaks recovered?																															
13	HM/HW Placed in proper containers?																															
14	Above ground tanks show no signs of leaks?																															
	HMC initials																															
	Time Review Complete Date/Time (ddmmyy/hhhh																															

Legend: Y= Yes, N= No, explain in Comments
N/A= Not Applicable, HMC= Hazardous Materials Coordinator

* Items 1 - 7 Inspect 1st workday of month only

COMMENTS: (Memorable events: Spills, Inspections, Waste pickup, Haz Mat Delivery, etc..)

5.0 Spill Response

- Spill Prevention and Response Plan
- Significant Spill
- Spill response hotline

5.0 Spill Response

5.1 Spill Prevention and Response Plan (SPRP)

- Worst case discharges
- 5 year update
- Emergency procedures
- Evacuation and rescue procedures

5.2 Significant Spill

- A spill of a hazardous material that poses a threat to humans and/or the environment, regardless of volume

- Any uncontained release to the land or water in excess of any of the following quantities:

  - for any hazardous substance in excess of 400 liters (110 gallons) or

  - for other solid hazardous material in excess of 225 kg (500 lbs)

  - for combinations of hazardous substances in excess of 340 kg (750 lbs)

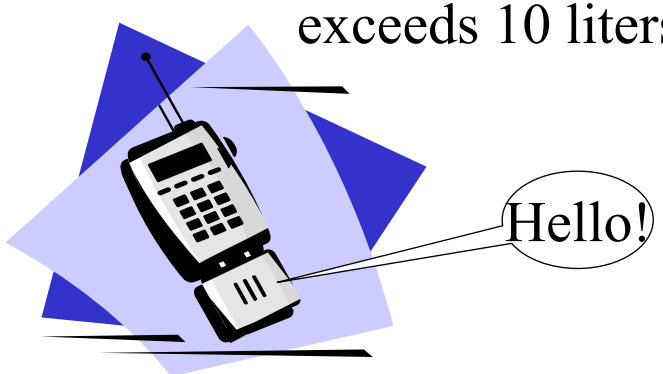
5.0 Spill Response

5.2 Measures in case of a spill

- Notify US Fire Department and IC (Installation Commander)
- Eliminate source and contain release (follow red plan)
- Report to executive agent German authorities
  - Police
  - City of Heidelberg Environmental Office

5.3 Spill Response

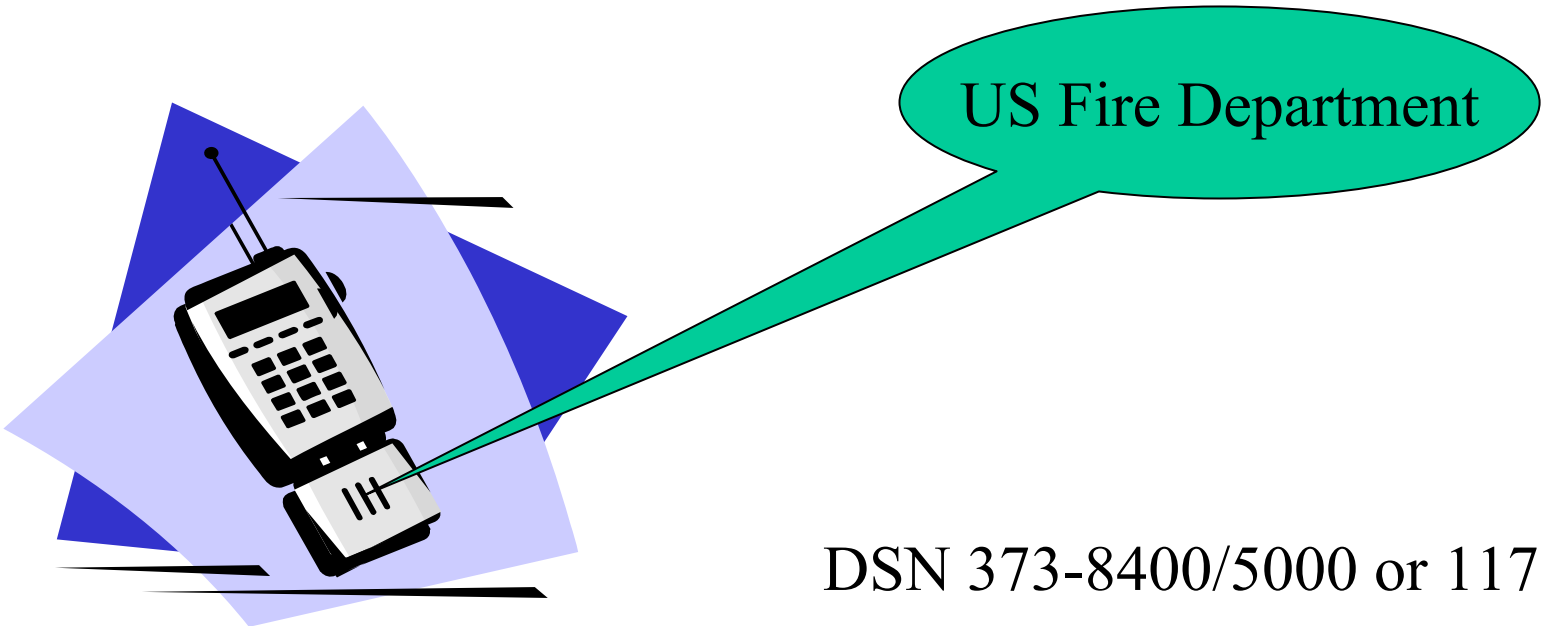
A REPORTABLE SPILL is when a Hazardous Waste/Material is discharged into a drain, sewerline, body of water, on gravel, CANNOT be immediately recovered OR the quantity exceeds 10 liters (2 1/2 gallons)



Call DSN 373-8400/5000 or 117 to report

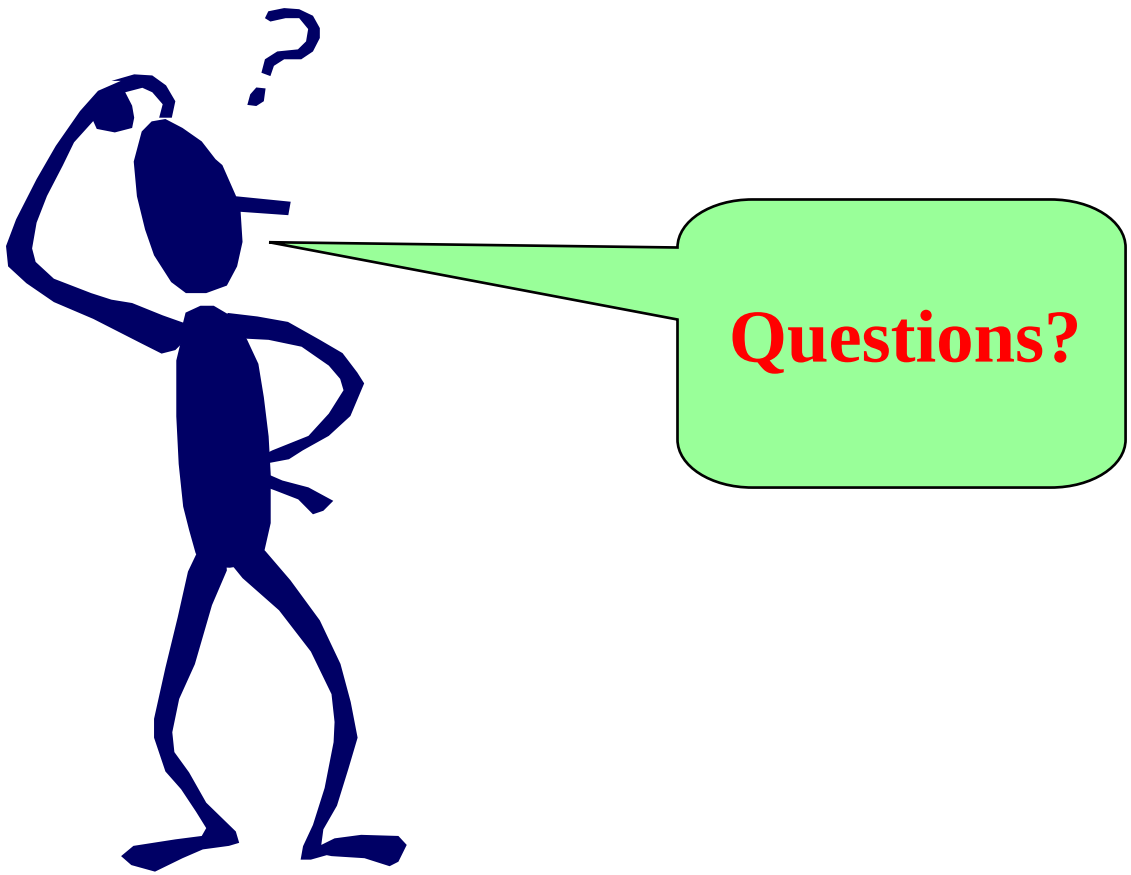
5.0 Spill Response

5.4 Emergency Call



DSN 373-8400/5000 or 117

USAG Heidelberg Environmental Awareness Training

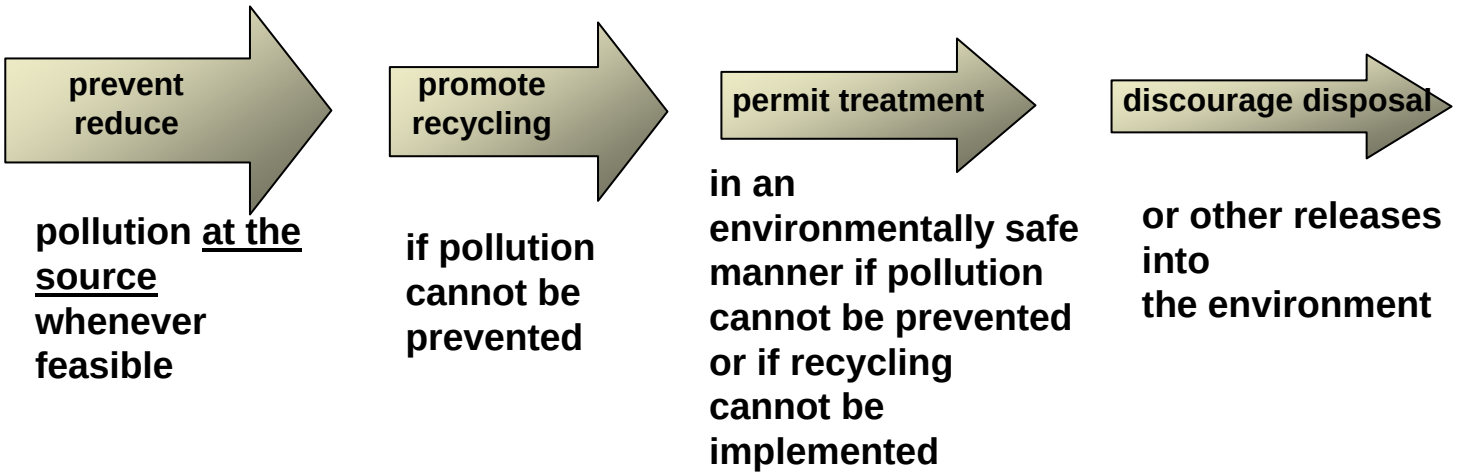


6.0 Pollution Prevention: Reducing Responsibility and Risk

P2 is the process of preventing, avoiding, or reducing pollution (and Hazardous Waste) and the associated costs and safety hazards through increased efficiency in the use of raw materials, energy, water, or other resources.

This means less responsibility, risk, and cost for units!

6.0 Pollution Prevention



Equipment or technology modifications
Process or procedure modifications
Reformulation or redesign of products
Substitution of raw materials
Improvements in housekeeping
Maintenance, training, and inventory control

Your Unit can conduct an Opportunity Assessment with the P2 Manager to identify possibilities to reduce responsibility and risk!